

INSTALLATION RESTORATION PROGRAM

FURTHER ACTION DECISION DOCUMENT FOR SITE 9 FINAL



DISTRIBUTION STATEMENT A

Approved for public release.
Distribution Unlimited

MICHIGAN AIR NATIONAL GUARD
ALPENA COMBAT READINESS TRAINING CENTER
ALPENA, MICHIGAN

September 1997

Air National Guard
Andrews AFB, Maryland

DTIC QUALITY INSPECTED 3

19980211 053

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE September 1997		3. REPORT TYPE AND DATES COVERED Decision Document
4. TITLE AND SUBTITLE Further Action Decision Document for Site 9 at Alpena CRTC, Alpena, MI.			5. FUNDING NUMBERS	
6. AUTHOR(S) N/A				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Montgomery Watson Novi, MI			8. PERFORMING ORGANIZATION REPORT NUMBER 4162.0120/6.2.2	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) ANG/CEVR 3500 Fetchet Avenue Andrews AFB, MD 20762-5157			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION AVAILABILITY STATEMENT Approved for public release distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Further Action Decision Document for Site 9. This document presents the rational for selecting groundwater monitoring as the proper remedial action at site 9.				
14. SUBJECT TERMS Installation Restoration Program; Decision Document; Air National Guard; Alpena CRTC, Alpena, MI			15. NUMBER OF PAGES 29	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT no	

TABLE OF CONTENTS

1.0 INTRODUCTION.....	1
2.0 SITE DESCRIPTION	3
3.0 SUMMARY OF SITE ANALYSIS	6
3.1 Groundwater	6
3.2 Soil	7
4.0 RISK ASSESSMENT	10
5.0 SELECTION OF REMEDIAL ALTERNATIVE.....	12
5.1 Selected Alternative: Limited Action	13
6.0 CONCLUSION	16
7.0 DECISION	18
8.0 REFERENCES.....	20

FIGURES

1 Base Location Map	4
2 Site 9 Radar Tower Location	5

APPENDICES

Appendix A Letter from the Michigan Department of Environmental Quality	
---	--

ACRONYM LIST

AGE	Aerospace Ground Equipment
ANGRC	Air National Guard Readiness Center
ARARs	Applicable or Relevant and Appropriate Requirements
BRA	Baseline Risk Assessment
COCs	chemicals of concern
CRTC	Combat Readiness Training Center
DOD	Department of Defense
FS	Feasibility Study
GSI	Groundwater/Surface Water Interface
HQ	hazard quotient
IRP	Installation Restoration Program
MDEQ	Michigan Department of Environmental Quality
MERA	Michigan Environmental Response Act
MIANG	Michigan Air National Guard
ppb	parts per billion
RAOs	remedial action objectives
RI	remedial investigation
SI	site investigation
SOV	soil organic vapor
VOCs	volatile organic compounds

1.0 INTRODUCTION

This final decision document presents the rationale for the limited action response proposed for the Michigan Air National Guard's (MIANG's) Alpena Combat Readiness Training Center (CRTC) Site 9, the radar tower location. The draft final decision document was reviewed by the Michigan Department of Environmental Quality (MDEQ) and approved in the August 19, 1997 letter provided in Appendix A. This document is part of the U.S. Department of Defense's (DOD's) Installation Restoration Program (IRP).

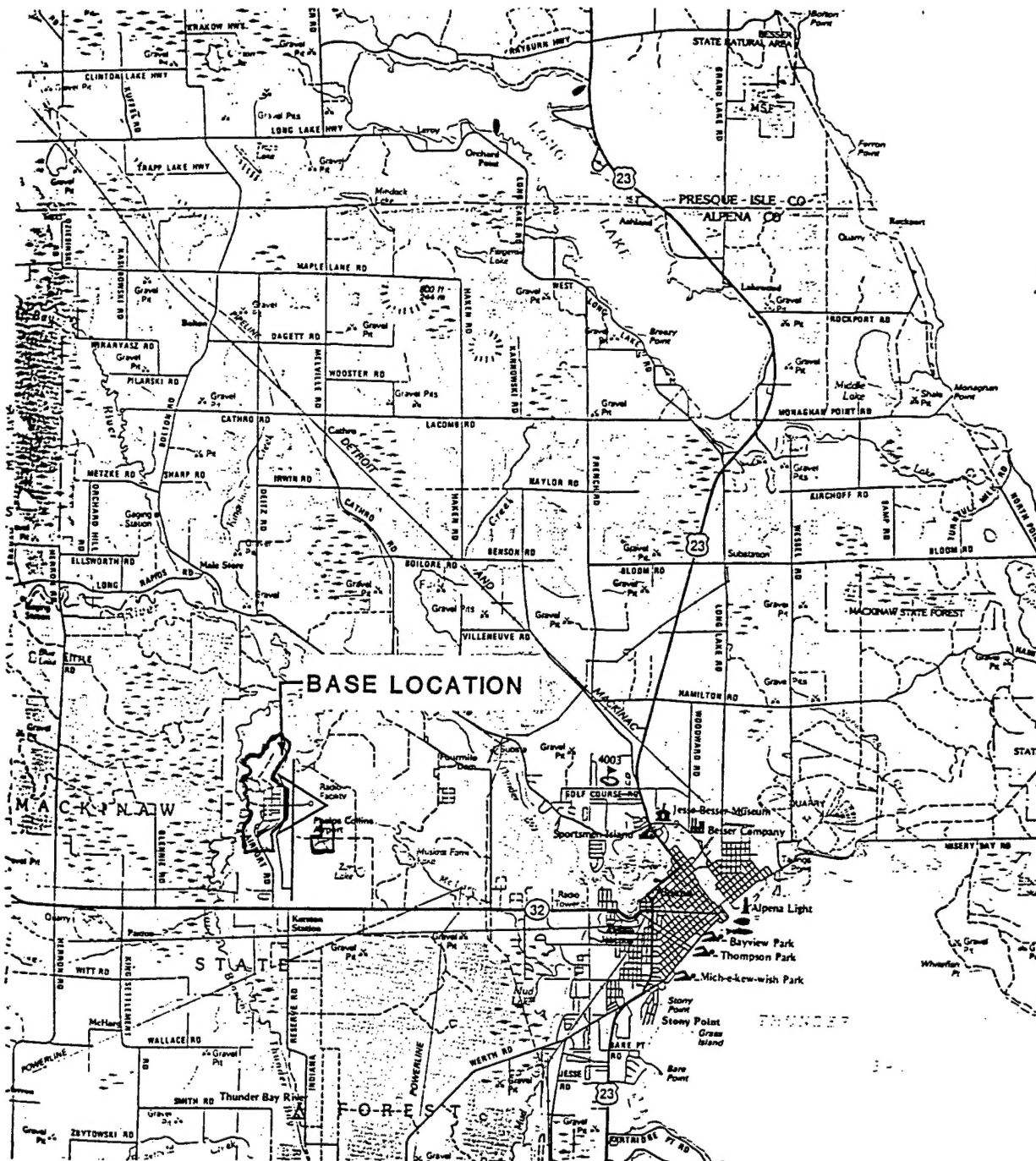
THIS PAGE INTENTIONALLY LEFT BLANK

2.0 SITE DESCRIPTION AND HISTORY

The MIANG Alpena CRTC is located at the Alpena County Regional Airport, approximately 5 miles west of the city of Alpena (Figure 1). The Alpena County Airport occupies approximately 3,000 acres of land. MIANG leases and has exclusive rights to approximately 600 acres of that property for the Alpena CRTC.

The Alpena CRTC has a long history of military and training use. Since 1952, the Alpena CRTC has primarily been used as a training facility. Training takes place year-round with the greatest influx of personnel occurring during the months of April through September. The Alpena CRTC has had no assigned aircraft since the mid-1950s, except for a period between 1964 and 1972, when a detachment of aircraft and personnel were on 24-hour intercept alert.

Site 9 consists of the Aerospace Ground Equipment (AGE) Maintenance shop (Building 417) and surrounding areas. The shop maintains ground equipment in support of aircraft operations. Currently, full-time personnel work in the AGE shop. The area around the shop is covered with grass and scattered trees. A wooded area lies to the north of the site. Features of Site 9 are presented in Figure 2.

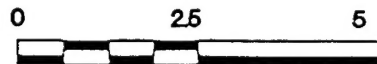


MICHIGAN

QUADRANGLE LOCATION

NOTE

BASE MAP DEVELOPED FROM THE MICHIGAN ATLAS AND GAZETTEER PAGE 84, FOURTH EDITION SECOND PRINTING.



SCALE IN MILES



MICHIGAN AIR NATIONAL GUARD
ALPENA CRTC
ALPENA, MICHIGAN

BASE LOCATION MAP

FIGURE 1



MONTGOMERY WATSON

. 410

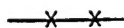
TREES.

TREES

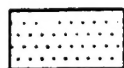
LEGEND



BUILDING



FENCE



STUDY AREA

Lost : 1507
res: 1/1 : 1507

אנחנו

५

גמל

17.15

4/1

1

①

3rd AVENUE

420

TREES

(GRAVEL ROAD)

TREES

"H" STREET

419

418

421

417

2nd AVENUE

0 100 200

SCALE IN FEET

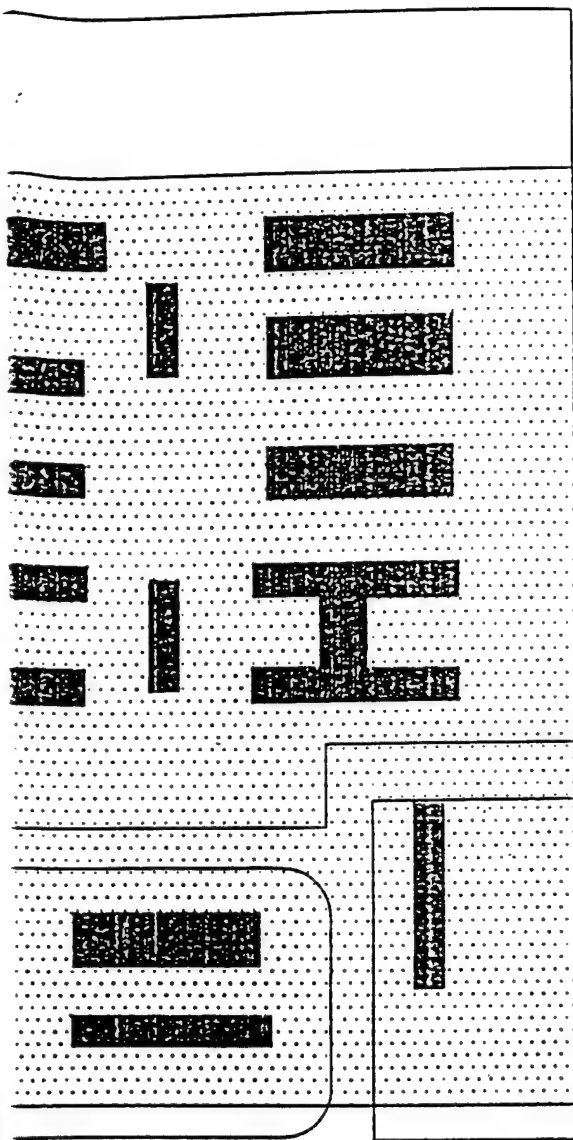
MICHIGAN AIR NATIONAL GUARD
ALPENA CRTG
ALPENA, MICHIGAN

SITE 9 - RADAR TOWER LOCATIC
SITE FEATURES MAP

FIGURE 2



MONTGOMERY W.



0 100 200
SCALE IN FEET



MICHIGAN AIR NATIONAL GUARD
ALPENA CRTC
ALPENA, MICHIGAN

SITE 9 - RADAR TOWER LOCATION
SITE FEATURES MAP

FIGURE 2



MONTGOMERY WATSON

3.0 SUMMARY OF SITE ANALYSIS

Our investigative work at Site 9 included both the site investigation (SI) from 1987 to 1991, and the remedial investigation (RI) from 1992 to 1993. During SI activities at Site 9 we installed and sampled monitoring wells, and the collected and analyzed soil samples. We completed surface geophysical surveys in 1992 as part of the RI activities. In addition, we completed a soil organic vapor (SOV) survey in 1993. Soil boring installation, monitoring well installation, and soil and groundwater sampling and analysis comprised the remainder of the RI field activities.

Figures 2-7 and 2-13 in the Final Feasibility Study (FS) (Montgomery Watson, 1996) show the soil and groundwater sampling locations for Site 9. The SI Report and the RI Report (The Earth Technology Corporation, 1995) include the details on the sampling, including the depth of each sample, contaminant concentrations, the depth of the contaminants, and the methods used in collecting and analyzing the samples. The following sections are a discussion of the chemicals of concern (COCs) identified in the FS for groundwater and soil at Site 9.

3.1 Groundwater

Constituents in groundwater samples from Site 9 were compared with Applicable or Relevant and Appropriate Requirements ARARs to identify COCs. ARARs considered in the FS include:

- Generic Industrial Cleanup Criteria for health based drinking water value (Industrial Drinking Water Values) as outlined in the Michigan Environmental Response Act (MERA), Operational Memorandum #14, Revision 2, June 1995.
- Generic Industrial Groundwater/Surface Water Interface (GSI) as outlined in the MERA, Operational Memorandum #14, Revision 2, June 1995.

Based on the information presented in the RI Report, lead was present in a sample from one well at Site 9 (RT9MW6) during the 1993 round of sampling at concentrations exceeding the

Industrial Drinking Water Value. The sampling conducted downgradient of RT9MW6 showed no lead in concentrations above the Industrial Drinking Water Values for groundwater.

Organic constituents were present in samples taken from up to three wells (RT9MW1, RT9MW4 and RT9MW6) during field sampling from 1987 to 1993 at levels exceeding the Industrial Drinking Water Values. RT9MW6 was the only well with contaminant values over the Industrial Drinking Water Values during the most recent (1993) sampling. The direction of the groundwater flow is to the northwest. RT9MW4 and RT9MW5 are both north of RT9MW6 and organic constituents were not present above Industrial Drinking Water Values in either RT9MW4 or RT9MW5 during the 1993 sampling. However, organic constituents were present in samples taken from RT9MW4 above Industrial Drinking Water Values prior to 1993.

3.2 Soil

Constituents in soil samples from Site 9 were compared with ARARs to identify COCs. ARARs considered in the FS include:

- Generic Industrial Cleanup Criteria for soil direct contact (Industrial Direct Contact Values) as outlined in the MERA, Operational Memorandum #14, Revision 2, June 1995.
- Generic Industrial Cleanup Criteria for soil considered protective of groundwater as outlined in the MERA, Operational Memorandum #14, Revision 2, June 1995.

Based on information presented in the RI Report, the soil samples collected at Site 9 did not contain levels of contaminants that exceed the Industrial Direct Contact Values.

Selenium was present in one soil samples taken from Site 9 at concentrations exceeding the Default Background Values, yet it was not present in groundwater samples at concentrations in excess of the Industrial Drinking Water Value. Lead was present in a groundwater sample (RT9MW6) at Site 9 at a concentration exceeding the Industrial Drinking Water Value. The concentrations of lead in soil at this site are considered within the range of base-wide background

levels, and therefore, the soil is not considered the source of the groundwater contamination. The levels of lead in all but one soil sample at Site 9 range between 670 to 2,600 parts per billion (ppb). These concentrations are characteristic of both the base background soil samples and the soil samples collected from the other sites. Additionally, all concentrations of lead from Site 9 are below the Default Background Level of 21,000 ppb. Soil sample RT9MW1 contained the highest concentration of lead for the Site 9 soil samples (15,000 ppb). The groundwater sampled from RT9MW1 did not contain lead in excess of the Industrial Drinking Water Values. This effectively demonstrates that lead in the soil is not impacting the groundwater. In addition, none of the other Alpena CRTC sites, all which have similar concentrations of lead in the soil, had lead contamination in the groundwater in excess of Industrial Drinking Water Values. Based on the available information, Site 9 soil is considered protective of groundwater.

THIS PAGE INTENTIONALLY LEFT BLANK

4.0 RISK ASSESSMENT

A baseline risk assessment (BRA) was performed during the RI to assess the risks posed to human health and the environment by the contaminants at the Alpena CRTC sites. This section summarizes the BRA results for Site 9. The complete BRA analysis for Site 9 is presented in the RI Report.

No current complete exposure pathways were identified in the RI Report BRA for Site 9. Future complete exposure pathways are those related to groundwater (ingestion, dermal contact, and inhalation of volatile organic compounds [VOCs]) for the recreational child and on-site/recreational adult. Carcinogenic and non-carcinogenic exposures were evaluated for all scenarios in the RI Report BRA. No future carcinogenic risks above 1×10^{-5} were calculated for any of the above listed pathways. No current or future hazard quotients (HQs) were determined to be above the reference level of 1.

THIS PAGE INTENTIONALLY LEFT BLANK

5.0 SELECTION OF REMEDIAL ALTERNATIVE

The FS considers several alternatives for remediation of Site 9. The remedial alternatives analyzed for Site 9 include:

- No Action: The No Action Alternative serves as a baseline for comparison with other remedial alternatives. Under this alternative, no remedial actions would be completed at Site 9 to contain or reduce the contaminants in the soil and/or groundwater.
- Limited Action for Groundwater (Natural Attenuation, Monitoring, and Restrictions): Under the Limited Action Alternative, the groundwater contamination would not be contained or treated, but rather monitored as it attenuates by natural processes. Monitoring of groundwater would be completed to support the information provided in the RI Report. Institutional controls will be necessary to prevent use of the groundwater until the constituent levels are below ARARs. Monitoring of groundwater will assess contaminant levels.
- Aboveground Groundwater Treatment Alternative: This alternative would include aboveground treatment (air stripping and ion exchange) for the groundwater. Institutional controls would be used to ensure that groundwater is not used as a drinking source during remediation.

The Limited Action Alternative is considered the alternative of choice for Site 9. This alternative will be protective of human health and the environment. The alternative will meet remedial action objectives (RAOs) and ARARs established for groundwater and soil. While the natural attenuation is occurring, institutional controls will prevent human exposure to groundwater impacts.

The Aboveground Groundwater Treatment Alternative would be protective of human health and the environment. The alternative will meet RAOs and ARARs for groundwater and soil.

Aboveground Groundwater Treatment Alternative would not necessarily result in a faster remediation than natural attenuation. Groundwater modeling and aquifer testing would be necessary to determine the time necessary for treatment. The number and levels of contamination (especially for lead) do not warrant active remediation. The Limited Action Alternative will effectively protect human health while monitoring the groundwater contamination.

The No Action Alternative would not protect human health and the environment. This alternative would not meet ARARs or RAOs and will not be considered an acceptable alternative.

5.1 Selected Alternative: Limited Action Alternative

Specifically, the Limited Action Alternative will involve groundwater sampling on a quarterly basis, with three rounds per year to assess the natural attenuation of contamination at the site. This alternative will include pre-design activities to verify the extent of the groundwater contamination, including the installation of a new monitoring well. Reviews will be completed while sampling activities are completed and a final closure report will be prepared to document sampling activities and results.

While sampling activities are taking place, institutional controls will be implemented by MIANG to prevent use of groundwater at the site. Groundwater is currently not the source of drinking water; therefore, this should not be an issue.

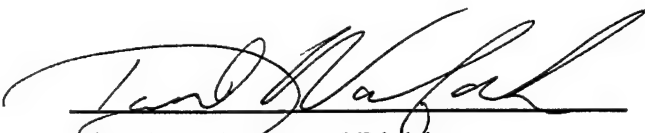
6.0 CONCLUSION

Based on the results of the field investigation, there are contaminants present in the groundwater at Site 9. The levels of contaminants in the groundwater at Site 9 do not warrant an active remediation alternative. It is expected that the constituent levels will naturally attenuate to levels protective of human health and the environment. The proposed alternative for Site 9 involves continued sampling and monitoring of the constituents as they attenuate. Once monitoring shows that the constituent levels have attenuated to levels meeting ARARs and RAOs, no additional monitoring or remedial activities will be required at this site.

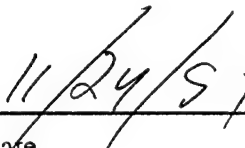
THIS PAGE INTENTIONALLY LEFT BLANK

7.0 DECISION

On the basis of the findings at the Alpena CRTC Site 9, the site has minimal contamination to groundwater. No active remediation will be conducted at the site, instead the site will be monitored as natural attenuation occurs. A final closure report will be prepared once the contaminant levels are determined to meet ARARs and RAOs. Following the final closure report, this site will be removed from further consideration in the IRP process, and no further investigative or remedial activities will be conducted with regard to this site.



Chief, Environmental Division



Date

Michigan Department of Environmental Quality

☐ Concur

☐ Non-Concur (Please provide reason)

Signature

Title

Date

THIS PAGE INTENTIONALLY LEFT BLANK

8.0 REFERENCES

- Hazardous Materials Technical Center, 1985. *Installation Restoration Program Records Research: Phelps Collins Air National Guard Base, Alpena, Michigan.*
- The Earth Technology Corporation, 1993. *Site Investigation Report, Combat Readiness Training Center, Michigan Air National Guard, Alpena County Regional Airport, Alpena, Michigan.*
- The Earth Technology Corporation, 1995. *Final Remedial Investigation Report, Alpena Combat Readiness Training Center, Alpena County Regional Airport, Michigan Air National Guard, Alpena, Michigan.*
- Montgomery Watson, 1996. *Final Feasibility Study, Alpena Combat Readiness Training Center Alpena, Alpena Michigan.*

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

LETTER FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

STATE OF MICHIGAN



JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

ENVIRONMENTAL RESPONSE DIVISION
KNAPPS CENTRE
PO BOX 30425
LANSING MI 48909-7925

August 19, 1997

Mr. Paul Wheeler -
ANGRC/CEVR
3500 Fetchet Avenue
Andrews AFB, Maryland 20762-5157

SUBJECT: Phelps Collins ANG, Alpena County

Dear Mr. Wheeler:

Staff from the Michigan Department of Environmental Quality (MDEQ) have reviewed the Installation Restoration Program, Draft Final Decision Documents, dated July 1996, for sites 1, 3, 5, 6, 7, 8, 9, and the Final Decision Documents for sites 11, 14, 15, and 16, which were dated May 1996. Staff have provided the following comments concerning the documents:

A "Limited Action Alternative" is approved for sites 1, 5, 6, 7, and 9 to monitor for exceedances of Groundwater Surfacewater Interface (GSI) criteria. The proposed alternative is to include the installation of wells (per the June 10, 1997 meeting minutes), quarterly sampling and institutional controls to prevent public exposure. Should exceedances of the GSI standard occur, a more aggressive remedial action may be requested for the site.

While the proposed monitoring addresses downgradient GSI concerns regarding the sites, additional sampling to verify that source area soils and groundwater are remediated are still needed prior to closure. It will be necessary to demonstrate that groundwater, in the source area as well as downgradient, does not exceed appropriate standards for a minimum period of one year, prior to closure. Institutional controls on the property will need to take into account all relevant exposure pathways as required under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, 20118 (6(d(ii))).

The Decision Documents for sites 3 and 8 had proposed no action alternatives for the sites. It was agreed in our June 10, 1997 meeting that a limited amount of sampling will take place to verify previous sampling at the sites. Should the agreed upon sampling indicate that contamination is not present at the proposed locations, a no action alternative will be approved for the sites.

Staff are in concurrence with the "No further Action" decisions reached in the "Final Installation Restoration Program Decision Documents" prepared for sites 11, 14, 15, and 16. Based on the above referenced reports, the levels of contaminants which will remain in soils have been characterized and do not pose an unacceptable risk on the basis of standardized exposure assumptions and acceptable risk levels (Residential Cleanup Criteria), as described in the provisions of R 299.5709 to R299.5715 of the administrative rules of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The sites can be considered closed with regard to these contaminants.

August 19, 1997

In regards to the forthcoming sampling at the Phelps Collins ANG base, it is recommended that the Data Quality Objectives and the level of QA/QC used correspond to Level III (three) Data Quality. It is also recommended that the constituents of concern be expanded to include the reporting of all Method 8260 aromatics, plus dimethylbenzenes and solvents. In those areas where aviation gasoline may have been used, or lost, ethylene dibromide should be included in the analysis. PCB's should be included in at least one sampling event in the dump area. The QAPP should include specific information with regard to the analytical laboratory and procedures to be used.

Please notify MDEQ district staff when the proposed sampling is to take place. If you have any questions or need further information please feel free to contact Mr. Andy Stempky at 517-731-4920, or or you may contact me.

Sincerely,



Dan Schultz, Chief
Field Operations Section
Environmental Response Division
517-241-7706

cc: Kimble, Alpena ANG
Delaney, MDEQ
Alford/Stempky/file, MDEQ
c. file (aps)